IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method for detecting [[for]] the presence of antibiotic resistant *Staphylococcus* bacteria from total unamplified *Staphylococcus* genomic DNA in a sample, ~~the sample comprising a wild-type mecA gene sequence or fragment thereof, one or more mutant mecA gene sequence or fragment thereof which differ from the wild-type mecA gene sequence by at least one nucleotide, or both, the method~~ comprising ~~the steps of~~:

a) providing an addressable substrate having bound thereto (i) wild-type capture oligonucleotides having a sequence that is complementary to at least part of a first portion of [[the]] a wild-type mecA gene sequence ~~or fragment thereof~~, and (ii) one or more mutant capture oligonucleotides having a sequence that is complementary to at least part of a first portion of [[the]] a mutant mecA gene sequence which differs from the wild-type mecA gene sequence by at least one nucleotide ~~or fragment thereof~~, wherein the first portion of the wild-type mecA gene sequence corresponds to the first portion of the mutant mecA gene sequence;

b) providing a ~~detection~~ probe comprising detector oligonucleotides bound to a gold nanoparticle, wherein the detector oligonucleotides have a sequence that is complementary to at least part of a second portion of the mecA gene sequence ~~or fragment thereof~~ of [[step]] (a);

c) contacting [[the]] a sample suspected of having unamplified genomic DNA from an antibiotic resistant *Staphylococcus* bacteria with the substrate and the ~~detection~~ probe under conditions that are effective for (i) the hybridization of the capture oligonucleotides to the first portion of the mecA gene sequence ~~or fragment thereof~~, (ii) the hybridization of the ~~detection~~ probe to the second portion of the mecA gene sequence ~~or fragment thereof~~, and (iii) the discrimination between the wild-type mecA gene sequence ~~or fragment thereof~~ and said ~~one or more~~ mutant mecA gene sequence ~~or fragment thereof that differ by at least one nucleotide~~; and

d) detecting whether the gold nanoparticle is associated with an address on the substrate having the one or more mutant capture oligonucleotides that are contacted with the sample, wherein detection of the gold nanoparticle at an address on the substrate having the one or more mutant capture oligonucleotides contacted with the sample is indicative that the sample

has genomic DNA from an antibiotic resistant *Staphylococcus* bacteria ~~capture oligonucleotide and detection probe hybridized with the first portion and second portions of the mecA gene sequence or fragment thereof~~.

2. (Currently Amended) The method of claim 1, wherein the mutant mecA gene sequence ~~or fragment thereof~~ comprises a Single Nucleotide Polymorphism relative to the wild-type mecA gene sequence.

3. (Currently Amended) The method of claim 1, wherein the capture oligonucleotide comprises the single nucleotide difference ~~is recognized by the capture oligonucleotide bound to the substrate~~.

4. (Currently Amended) The method of claim 1, wherein the detector oligonucleotides comprise the single nucleotide difference ~~is recognized by the detector oligonucleotides~~.

5. (Cancelled).

6. (Currently Amended) The method of claim 1, wherein the substrate comprises a plurality of capture oligonucleotides~~, each of which can recognize a~~ comprising different single nucleotide polymorphisms ~~polymorphism~~.

7. (Currently Amended) The method of claim 1, wherein the sample comprises more than one mecA gene sequence ~~or fragment thereof~~, each of which comprises one or more different single nucleotide polymorphisms.

8. (Currently Amended) The method of claim 1, wherein one or more types of detector probes are provided, each of which has detector oligonucleotides bound thereto that are capable of hybridizing to the mecA gene sequence ~~or fragment thereof~~.

9. (Withdrawn) The method of claim 1, wherein sample is contacted with the detector probe so that a nucleic acid target present in the sample hybridizes with the detector oligonucleotides on the detector probe, and the nucleic acid target bound to the detector probe is

then contacted with the substrate so that the nucleic acid target hybridizes with the capture oligonucleotide on the substrate.

10. (Currently Amended) The method of claim 1, wherein sample is contacted with the substrate so that the mecA gene sequence ~~or fragment thereof~~ present in the sample hybridizes with the capture oligonucleotide, and the mecA gene sequence ~~or fragment thereof~~ bound to the capture oligonucleotide is then contacted with the detector probe so that the mecA gene sequence ~~or fragment thereof~~ hybridizes with the detector oligonucleotides on the detector probe.

11. (Withdrawn) The method of claim 1, wherein the sample is contacted simultaneously with the detector probe and the substrate.

12. (Cancelled).

13. (Currently Amended) The method of claim 1, wherein the detection is ~~probe allows detection~~ by photonic, electronic, acoustic, opto-acoustic, gravity, electrochemical, electro-optic, mass-spectrometric, enzymatic, chemical, biochemical, or physical means.

14.-26. (Cancelled).

27. (Previously Presented) The method of claim 1, wherein the detecting comprises contacting the substrate with silver stain.

28. (Previously Presented) The method of claim 1, wherein the detecting comprises detecting light scattered by the nanoparticle.

29. (Previously Presented) The method of claim 1, wherein the detecting comprises observation with an optical scanner.

30. (Previously Presented) The method of claim 1, wherein the detecting comprises observation with a flatbed scanner.

31. (Original) The method of claim 29 or 30, wherein the scanner is linked to a computer loaded with software capable of calculating grayscale measurements, and the grayscale measurements are calculated to provide a quantitative measure of the amount of nucleic acid detected.

32. (Previously Presented) The method of claim 1, wherein the oligonucleotides attached to the substrate are located between two electrodes, the nanoparticles are made of a material that is a conductor of electricity, and step (d) comprises detecting a change in conductivity.

33. (Original) The method of claim 32, wherein the electrodes are made of gold and the nanoparticles are made of gold.

34. (Original) The method of claim 32, wherein the substrate is contacted with silver stain to produce the change in conductivity.

35. (Currently Amended) The method of claim 1, wherein a plurality of capture oligonucleotides, each of which can recognize a different mecA gene sequence ~~or fragment thereof~~ are attached to the substrate in an array of spots and each spot of oligonucleotides is located between two electrodes, the nanoparticles are made of a material that is a conductor of electricity, and step (d) comprises detecting a change in conductivity.

36. (Original) The method of claim 35, wherein the electrodes are made of gold and the nanoparticles are made of gold.

37. (Original) The method of claim 35, wherein the substrate is contacted with silver stain to produce the change in conductivity.

38.-167. (Cancelled).

168. (Previously Presented) The method of claim 1, wherein the substrate further comprises one or more capture oligonucleotides having sequences that are complementary to Tuf gene, 16S rRNA gene, or both, or to fragments thereof.

169. (Previously Presented) The method of claim 168, wherein the method is used to distinguish between two or more species of a common genus.

170. (Previously Presented) The method of claim 169, wherein the species differ by two or more nonconsecutive nucleotides.

171. (Previously Presented) The method of claim 169, wherein the species differ by two or more consecutive nucleotides.

172. (Previously Presented) The method of claim 169, wherein the species differ by at least one nucleotide.

173. (New) The method of claim 1 wherein the sample does not comprise amplified mecA DNA.

174. (New) The method of claim 1 wherein the amount of the sample and the conditions are effective to detect unamplified genomic mecA DNA.

IN THE DRAWINGS

Substitute drawings are enclosed herewith.